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Generate Collection

Print

L1: Entry 1 of 2

File: USPT

Jul 8, 2003

US-PAT-NO: 6591177

DOCUMENT-IDENTIFIER: US 6591177 B1

TITLE: Method of controlling a CVT automatic transmission

DATE-ISSUED: July 8, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Loffler; Bernd	Ravensburg			DE

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
ZF Batavia, L.L.C.	Batavia	OH			02

APPL-NO: 09/697553 [PALM]

DATE FILED: October 26, 2000

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
DE	199 52 476	October 29, 1999

INT-CL-ISSUED: [07] F16H 61/12

INT-CL-CURRENT:

TYPE IPC	DATE
CIPS <u>F16 H 61/12</u>	20060101
CIPS <u>F16 H 61/662</u>	20060101
CIPS <u>F16 H 61/66</u>	20060101

US-CL-ISSUED: 701/63; 701/62, 477/45, 477/903, 474/18, 474/28

US-CL-CURRENT: 701/63; 474/18, 474/28, 477/45, 477/903, 701/62

FIELD-OF-CLASSIFICATION-SEARCH: 477/44, 477/45, 477/906, 477/903, 701/62, 701/63, 701/34, 474/28, 474/18, 474/69

See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected

Search ALL

Clear

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/> <u>4393732</u>	July 1983	Suzuki et al.	477/125
<input type="checkbox"/> <u>4425621</u>	January 1984	Skarvada	303/168
<input type="checkbox"/> <u>4823644</u>	April 1989	Ohkumo	477/44
<input type="checkbox"/> <u>5062050</u>	October 1991	Petzold et al.	192/3.58
<input type="checkbox"/> <u>5168778</u>	December 1992	Todd et al.	474/18
<input type="checkbox"/> <u>5315972</u>	May 1994	Judy et al.	123/198D
<input type="checkbox"/> <u>5366416</u>	November 1994	Roovers et al.	474/18
<input type="checkbox"/> <u>5515272</u>	May 1996	Sakai et al.	180/273
<input type="checkbox"/> <u>5617337</u>	April 1997	Eidler et al.	123/478
<input type="checkbox"/> <u>5707314</u>	January 1998	Kashiwabara et al.	474/17
<input type="checkbox"/> <u>5720692</u>	February 1998	Kashiwabara	474/28
<input type="checkbox"/> <u>6050917</u>	April 2000	Gierling et al.	477/45
<input type="checkbox"/> <u>6224509</u>	May 2001	Gierling	477/45
<input type="checkbox"/> <u>6243638</u>	June 2001	Abo et al.	477/45

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	CLASS
196 50 218	June 1998	DE	
406213316	August 1994	JP	

OTHER PUBLICATIONS

Boos, Manfred and Wolf-Ekkehard Krieg, "Stufenloses Automatikgetriebe Ecotronic von ZF" ATZ Automobiltechnische Zeitschrift 196 (1994) 6, pp. 378-384.

ART-UNIT: 3681

PRIMARY-EXAMINER: Rodriguez; Saul

ASSISTANT-EXAMINER: Williams; Eric M.

ATTY-AGENT-FIRM: Davis & Bujold, P.L.L.C.

ABSTRACT:

A method is described for control of a CVT automatic transmission (1) in which a sensed main pressure (p_{hd_act}) and a sensed contact pressure (p_{s2_act}) of a secondary pulley (7) are entered as signals in an electronic transmission control (8). For diagnosis of an error in the sensing of the main pressure (p_{hd_act}) and/or of the contact pressure (p_{s2_act}) of the secondary pulley (7) their actual values or comparison variable (.vertline.p_{hd_act}-p_{hd_nom}.vertline., .vertline.p_{s2_act}-p_{s2_nom}.vertline.) formed therefrom are compared with applicable threshold values (p_{hd_min}, p_{d_phd_regdiff}, p_{s2_min}, p_{d_ps2_regdiff}) associated with a range of plausible pressure values.

Refine Search

Your wildcard search against 10000 terms has yielded the results below.

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Search Results -

Terms	Documents
L14 AND (SPEED\$ WITH PRESSUR\$)	12

Database:

US Pre-Grant Publication Full-Text Database
US Patents Full-Text Database
US OCR Full-Text Database
EPO Abstracts Database
JPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Search:

L20

Refine Search

Recall Text

Clear

Interrupt

Search History

DATE: Monday, January 22, 2007 [Purge Queries](#) [Printable Copy](#) [Create Case](#)

<u>Set Name</u> side by side	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u> result set
	DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; THES=ASSIGNEE; PLUR=YES; OP=OR		
L20	L14 AND (SPEED\$ WITH PRESSUR\$)	12	L20
L19	L14 AND (ROTAT\$ WITH SPEED\$ WITH PRESSUR\$)	0	L19
	DB=USPT,EPAB,DWPI; THES=ASSIGNEE; PLUR=YES; OP=OR		
L18	("6591177" "DE019952476A1" "DE 19952476A")[URPN]	0	L18
	DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; THES=ASSIGNEE; PLUR=YES; OP=OR		
L17	L12	3	L17
	DB=USPT,EPAB,DWPI; THES=ASSIGNEE; PLUR=YES; OP=OR		
L16	("6591177" "DE019952476A1" "DE 19952476A")[URPN]	0	L16

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L15 L12 3 L15

DB=USPT; THES=ASSIGNEE; PLUR=YES; OP=OR

(6224509 | 6050917 | 6243638 | 4425621 | 4823644 | 5168778 | 5366416 |
L14 5617337 | 5062050 | 5707314 | 4393732 | 5515272 | 5315972 | 5720692)! 14 L14
[PN]

DB=USPT,EPAB,DWPI; THES=ASSIGNEE; PLUR=YES; OP=OR

("6591177" | "DE019952476A1" | "DE 19952476A")
L13 [ABPN1,NRPN,PN,WKU] 3 L13

DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; THES=ASSIGNEE; PLUR=YES; OP=OR

L12 L1 OR L2 OR L3 OR L4 OR L5 OR L6 OR L7 OR L8 3 L12

L11 L1-L8 11269175 L11

L10 L4 and ((rotat\$ with speed\$) same (pressur\$ with threshold\$)) 0 L10

L9 L1 and ((rotat\$ with speed\$) same (pressur\$ with threshold\$)) 0 L9

L8 L1 and (pressur\$ with threshold\$) 2 L8

L7 L6 and pump\$ 1 L7

L6 L1 and ((abnormal\$ or error\$ or incorrect\$) same pressur\$) 2 L6

L5 L4 and ((low\$ or minimum\$ or threshold\$) with pressur\$ with (speed or rotat\$)) 1 L5

L4 L1 or L3 3 L4

L3 L2 or L2 2 L3

L2 de adj 19952476\$ 2 L2

L1 6591177.pn. 2 L1

END OF SEARCH HISTORY

Hit List

First Hit

Your wildcard search against 10000 terms has yielded the results below.

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Search Results - Record(s) 1 through 10 of 12 returned.

☐ 1. Document ID: US 6243638 B1

L20: Entry 1 of 12

File: USPT

Jun 5, 2001

US-PAT-NO: 6243638

DOCUMENT-IDENTIFIER: US 6243638 B1

TITLE: Electronic transmission control system for automotive vehicle with continuously variable automatic transmission

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 2. Document ID: US 6224509 B1

L20: Entry 2 of 12

File: USPT

May 1, 2001

US-PAT-NO: 6224509

DOCUMENT-IDENTIFIER: US 6224509 B1

TITLE: Method for monitoring of a continuously variable transmission

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 3. Document ID: US 6050917 A

L20: Entry 3 of 12

File: USPT

Apr 18, 2000

US-PAT-NO: 6050917

DOCUMENT-IDENTIFIER: US 6050917 A

TITLE: CVT control method

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw D
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☐ 4. Document ID: US 5720692 A

L20: Entry 4 of 12

File: USPT

Feb 24, 1998

US-PAT-NO: 5720692

DOCUMENT-IDENTIFIER: US 5720692 A

TITLE: Method and apparatus for controlling a continuously variable transmission

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw De
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☐ 5. Document ID: US 5707314 A

L20: Entry 5 of 12

File: USPT

Jan 13, 1998

US-PAT-NO: 5707314

DOCUMENT-IDENTIFIER: US 5707314 A

TITLE: Method and apparatus for controlling a continuously variable transmission

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw De
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☐ 6. Document ID: US 5617337 A

L20: Entry 6 of 12

File: USPT

Apr 1, 1997

US-PAT-NO: 5617337

DOCUMENT-IDENTIFIER: US 5617337 A

TITLE: Method and device for monitoring sensor functions

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw De
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☐ 7. Document ID: US 5515272 A

L20: Entry 7 of 12

File: USPT

May 7, 1996

US-PAT-NO: 5515272

DOCUMENT-IDENTIFIER: US 5515272 A

TITLE: Apparatus for diagnosing automatic transmission based on engine speed as compared with reference range

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw De
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☐ 8. Document ID: US 5315972 A

L20: Entry 8 of 12

File: USPT

May 31, 1994

US-PAT-NO: 5315972

DOCUMENT-IDENTIFIER: US 5315972 A

**** See image for Certificate of Correction ****

TITLE: Vehicle diagnostic control system

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMMC	Draw D
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☐ 9. Document ID: US 5168778 A

L20: Entry 9 of 12

File: USPT

Dec 8, 1992

US-PAT-NO: 5168778

DOCUMENT-IDENTIFIER: US 5168778 A

TITLE: CVT downshift control strategy to minimize slip at the drive pulley

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMMC	Draw D
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☐ 10. Document ID: US 5062050 A

L20: Entry 10 of 12

File: USPT

Oct 29, 1991

US-PAT-NO: 5062050

DOCUMENT-IDENTIFIER: US 5062050 A

TITLE: Continuously variable transmission line pressure control

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMMC	Draw D
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Terms

Documents

L14 AND (SPEED\$ WITH PRESSUR\$)

12

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L20: Entry 2 of 12

File: USPT

May 1, 2001

US-PAT-NO: 6224509

DOCUMENT-IDENTIFIER: US 6224509 B1

TITLE: Method for monitoring of a continuously variable transmission

DATE-ISSUED: May 1, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gierling; Armin	Langenargen			DE

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
ZF Batavia, L.L.C.	Batavia	OH			02

APPL-NO: 09/496545 [\[PALM\]](#)

DATE FILED: February 2, 2000

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
DE	199 04 920	February 6, 1999

INT-CL-ISSUED: [07] F16H 59/06

INT-CL-CURRENT:

TYPE IPC	DATE
CIPS F16 H 61/00	20060101
CIPN F16 H 61/66	20060101
CIPS F16 H 61/12	20060101
CIPN F16 H 61/662	20060101

US-CL-ISSUED: 477/45; 474/28

US-CL-CURRENT: [477/45](#); [474/28](#)

FIELD-OF-CLASSIFICATION-SEARCH: 477/45, 474/28

See application file for complete search history.

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

[Search Selected](#)

[Search ALL](#)

[Clear](#)

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/>	<u>5054450</u>	October 1991	Oota et al.	123/478
<input type="checkbox"/>	<u>5665023</u>	September 1997	Aoki et al.	477/48
<input type="checkbox"/>	<u>5944626</u>	August 1999	Spiess et al.	474/28
<input type="checkbox"/>	<u>5961408</u>	October 1999	Konig et al.	474/18
<input type="checkbox"/>	<u>6090000</u>	July 2000	Senger	474/18

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	CLASS
44 36 506 A1	April 1996	DE	

ART-UNIT: 361

PRIMARY-EXAMINER: Wright; Dirk

ATTY-AGENT-FIRM: Davis & Bujold, P.L.L.C.

ABSTRACT:

The method for monitoring a continuously variable transmission (CVT) with a variator for adjustment of the speed ratio, which has its primary and secondary adjustment devices respectively controlled by a pressure-regulating valve, consists of a travel monitoring and/or pressure monitoring of the pressure-regulating valves wherein in case of detection of an incorrect operation the power-flow transmitting clutch is opened.

8 Claims, 1 Drawing figures

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Search Results - Record(s) 11 through 12 of 12 returned.

☐ 11. Document ID: US 4823644 A

L20: Entry 11 of 12

File: USPT

Apr 25, 1989

US-PAT-NO: 4823644

DOCUMENT-IDENTIFIER: US 4823644 A

TITLE: Fail safe for a continuously variable transmission

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. De
------	-------	----------	-------	--------	----------------	------	-----------	-----------	-------------	--------	------	----------

☐ 12. Document ID: US 4393732 A

L20: Entry 12 of 12

File: USPT

Jul 19, 1983

US-PAT-NO: 4393732

DOCUMENT-IDENTIFIER: US 4393732 A

TITLE: Abnormality treatment device for automatic transmission control device

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC	Draw. De
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Terms

Documents

L14 AND (SPEED\$ WITH PRESSUR\$)

12

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End of Result Set

☐ [Generate Collection](#) [Print](#)

L1: Entry 2 of 2

File: DWPI

Jul 8, 2003

DERWENT-ACC-NO: 2001-376157
DERWENT-WEEK: 200353
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TITLE: Method for controlling a CVT automatic gearbox records detected main pressure and detected application pressure from a secondary disk as signals on an electronic gearbox control

INVENTOR: LOEFFLER, B

PATENT-ASSIGNEE: ZF FRIEDRICHSHAFEN AG (ZAHF), ZF BATAVIA LLC (ZAHF)

PRIORITY-DATA: 1999DE-1052476 (October 29, 1999)

[Search Selected](#)

[Search ALL](#)

[Clear](#)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
<input type="checkbox"/> US 6591177 B1	July 8, 2003		000	F16H061/12
<input type="checkbox"/> DE 19952476 A1	May 23, 2001		013	F16H061/12

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
US 6591177B1	October 26, 2000	2000US-0697553	
DE 19952476A1	October 29, 1999	1999DE-1052476	

INT-CL (IPC): F16H 59/06; F16H 61/12

ABSTRACTED-PUB-NO: DE 19952476A

BASIC-ABSTRACT:

NOVELTY - Detected main pressure (phdist) and detected application pressure (ps2ist) from a secondary disk are recorded as signals on an electronic gearbox control. Actual values or comparative values (phdist-phdsoll) are compared with applicable thresholds (phdmin, pdphdregeldiff) assigned to a range of plausible pressure values for diagnosing errors in the detection of main pressure and/or application pressure from the secondary disk.

USE - In modern automatic gearboxes.

ADVANTAGE - Faults in detecting main pressure and application pressure in a variator's secondary disk are reliably identified, so that further processing of implausible pressure values can be avoided.

DESCRIPTION OF DRAWING(S) - The drawing shows a flow chart of a program module for serial testing of detected pressures. (Drawing includes non-English language text).

Detected main pressure ph di st

Detected application pressure ps 2i st

Actual or comparative values ph di st-ph ds oll

Applicable thresholds ph dm in,pdp hdr egeldiff

ABSTRACTED-PUB-NO: DE 19952476A

EQUIVALENT-ABSTRACTS:

CHOSEN-DRAWING: Dwg.3/4

DERWENT-CLASS: Q64 X22

EPI-CODES: X22-G01;

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PALM Intranet

Application
Number

IDS Flag Clearance for Application 10676266

**IDS
Information**

Content	Mailroom Date	Entry Number	IDS Review	Last Modified	Reviewer
M844	2006-11-07	23	Y <input checked="" type="checkbox"/>	2007-01-16 14:50:47.0	CNguyen1
M844	2003-10-02	12	Y <input checked="" type="checkbox"/>	2006-05-01 16:06:21.0	EBurns
<input type="button" value="Update"/>					